AU 2133
IFW

FEE TRANSMITTAL FOR FY 2004

(FY 2004 Begins 10/01/2003)

TOTAL AMOUNT OF PAYMENT ($) 330.00

Complete if known:

Application No.	09/249,489
Filing Date	2/12/99
First Named Inventor	Kondo
Examiner Name	Chaudry, M.
Art Unit	2133
Attorney Docket No.	80398.P198

____ **Applicant claims small entity status. See 37 CFR 1.27.**

METHOD OF PAYMENT (check all that apply)

__X__ **Check** _____ **Credit Card** _____ **Money Order** _____ **Other** _____ **None**

__X__ **Deposit Account**

Deposit Account Number : 02-2666

Deposit Account Name: _____

__X__ **The Director is Authorized to do the following with respect to the above-identified Deposit Account:**

- ____ **Charge fee(s) indicated below.**
- __X__ **Credit any overpayments.**
- __X__ **Charge any additional fees during the pendency of this application.**
- __X__ **Any concurrent or future reply that requires a petition for extension of time should be treated as incorporating an appropriate petition for extension of time and all required fees should be charged.**
- ____ **Charge fee(s) indicated below except for the filing fee.**

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility application filing fee	
1002	340	2002	170	Design application filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional application filing fee	

SUBTOTAL (1) $ 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below		Fee Paid
Total Claims	_____	– 20** =	_____	X _____	=	_____
Independent Claims	____	– 3** =	_____	X _____	=	_____
Multiple Dependent				_____	=	_____

****Or number previously paid, if greater; For Reissues, see below.**

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	**Reissue independent claims over original patent
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) $ 0

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1813	8,800	1813	8,800	Request for inter parties reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	For filing a submission after final rejection (see 37 CFR 1.129(a))	
1814	110	2814	55	Statutory Disclaimer	
1810	770	2810	385	For each additional invention to be examined (see 37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
1504	300	1504	300	Publication fee for early, voluntary, or normal pub.	
1505	300	1505	300	Publication fee for republication	
1803	130	1803	130	Request for voluntary publication or republication	
1808	130	1808	130	Processing fee under 37 CFR 1.17(i) (except provisionals)	
1454	1,330	1454	1,330	Acceptance of unintentionally delayed claim for priority	
Other fee (specify)					
Other fee (specify)					

SUBTOTAL (3) $330.00

*Reduced by Basic Filing Fee Paid

SUBMITTED BY:

Typed or Printed Name: Sheryl Sue Holloway

Signature: _____ Date: May 23, 2004

Reg. Number: 37,850 Telephone Number: 408-720-8300

Send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Atty Docket No. 080398P198 *Patent*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Examiner: Chaudry, M.
Kondo, et al.	Art Unit: 2133
Serial No. 09/249,489	
Filed: February 12, 1999	
For: METHOD AND APPARATUS FOR ERROR DATA RECOVERY	

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF UNDER 37 C.F.R. 1.192

This is an appeal to the Board of Patent Appeals and Interferences from the decision of the Examiner of Group 2133, dated March 16, 2004, which finally rejected claims 1-76 and 78-96 in the above-identified application. This Appeal Brief is hereby submitted in triplicate pursuant to 37 C.F.R. § 1.192(a).

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the full interest in the invention, Sony Corporation, 6-7-35 Kitashingawa, Shinagawa-ku, Toyko, Japan.

II. RELATED APPEALS AND INTERFERENCES

To the best of Appellant's knowledge, there are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the Board's decision in the instant appeal.

III. STATUS OF THE CLAIMS

Claims 1-76 and 78-96 are pending in the application and were finally rejected in an Office Action mailed March 16, 2004. Claims 1-76 and 78-96 are the subject of this appeal. A copy of Claims 1-76 and 78-96 as they stand on appeal are set forth in Appendix A.

IV. STATUS OF AMENDMENTS

The application was filed on February 12, 1999 with ninety-five claims numbered 1-96. Claim 77 was inadvertently omitted. Claims 1, 16, 30, 40, 52, 71, 72, 81, 89 and 96 are independent claims.

In a first non-final Office Action mailed on December 2, 2002, the Examiner noted the missing claim and rejected claims 1-76 and 78-96 under 35 U.S.C. § 112, second paragraph because he considered the phrase "candidate hypotheses" unclear. The Examiner also objected to claims 1, 44 and 45 as informal. In a response filed March 3, 2003, Appellant cancelled claim 77 and amended claims 1, 44 and 45 to overcome the informalities. Appellant also amended claims 1, 4, 8, 12, 16, 17, 21, 47, 27, 30, 31, 33, 36, 40-42, 45-47, 52, 56, 58-50, 63, 64, 66, 67, 71, 74, 81 and 91 to deleted the word "candidate" from the claims. Appellant further amended claims 1-4, 10, 30, 37, 38, 40,

41, 43, 45, 49, 52, 72, 74, 75, 78-81, 83 and 89 to remove "step" and "steps of" from the claims. In a second non-final Office Action, the Examiner withdrew the objections and rejections of the claims from the first Office Action and rejected claims 1-76 and 78-96 under 35 U.S.C. § 103(a) over a single reference, U.S. Patent 5,712,957 to Waibel et al.

Appellant filed a CPA on July 11, 2003 and amended the independent claims to clarify that the claimed bitstream comprises encoded image data. The limitation of image data was present in a number of the original dependent claims as filed, e.g. claim 13, and was deleted from those claims. Others of the dependent claims were amended to conform to the amended independent claims. Claim 96 was also amended to remove "steps of". In a third non-final Office Action mailed September 5, 2003, the Examiner maintained his rejection of the claims under § 103(a) over Waibel. In a response mailed December 5, 2003, Appellant challenged the rejection of the claims under § 103 over the single reference. Appellant made no further claim amendments. In the final Office Action mailed March 16, 2004, the Examiner maintained the § 103(a) rejection over Waibel. On June 16, 2004, Appellant filed a Notice of Appeal, which was received by the Office on June 21, 2004.

V. SUMMARY OF INVENTION

Appellant's invention as claimed recovers data in a bitstream of encoded image data. In claims 1-71 and 81-88, possible decodings (hypotheses) for lost or damaged data in the bitstream are generated and scored. The hypothesis with the best score is used to decode the lost or damaged data. At least one of the other hypotheses is evaluated and error recovery is performed on data that was flagged in the bitstream as a result of the

evaluation. In claims 72-76, 78-80 and 89-96, erroneous data due to error propagation in the bitstream is detected and recovered.

VI. ISSUES

I. Whether the invention as claimed in claims 1-76 and 78-96 is unpatentable under 35 U.S.C. §103(a) over U.S. Patent 5,712,957 to Waibel et al.

VII. GROUPING OF CLAIMS

I. Group I consists of Claims 1-13, 16-18, 21-49, 52, 53, 56-69, 71, 74, 81-83, 87, 88 and 91 that stand rejected on the grounds presented as Issue I. Claims 1-13, 16-18, 21-49, 52, 53, 56-69, 71, 74, 81-83, 87, 88 and 91 stand or fall together. Claim 1 is the representative claim for Group I.

II. Group II consists of Claims 72-73, 78-80, 89, 90 and 93-96 that stand rejected on the grounds presented as Issue I. Claims 72-73, 78-80, 89, 90 and 93-96 stand or fall together. Claim 72 is the representative claims for Group II.

II. Group III consists of dependent Claims 14, 15, 19, 20, 50, 51, 54, 55, 70, 75, 76, 84-86 and 92 that stand rejected on the grounds presented as Issue I. Claims 14, 15, 19, 20, 50, 51, 54, 55, 70, 75, 76, 84-86 and 92 stand or fall together. Claim 14 is the representative claim for Group II.

VIII. ARGUMENTS

I. Claims 1-13, 16-18, 21-49, 52, 53, 56-69, 71, 74, 81-83, 87, 88 and 91 are Patentable under 35 U.S.C. § 103(a) over 5,712,957 to Waibel et al.

Waibel discloses the correction of errors in translating spoken words into text by a speech recognition engine. Upon receiving speech, the engine generates a set of hypotheses of the spoken words using a first language model, and selects one of the set as the primary recognized speech. When the user indicates a portion of the primary recognized speech is in error and repeats the portion, a correction and repair module creates a new (second) language model based on the primary recognized speech and send the second language model to the engine. The speech recognition engine uses the second language model to generate another set of hypotheses, and selects one of the set as the secondary recognized speech. Both the primary and secondary recognized speech are used to correct the error. Waibel relies on well-known statistical speech language models, such as trigram, bigram, or wordpairs, which are based on the frequency in which combinations of phonemes appear within a particular language. As one of skill in the art of speech recognition is aware, a phoneme is the smallest portion of speech that can be distinguished from the other speech sounds. In order to reject the claims under § 103 over the single reference, the Examiner asserted Official Notice of several limitations of Appellant's claims that the Examiner admitted were not taught or suggested by Waibel.

Erroneously Recognized Speech is not Equivalent to Lost or Damaged Data Received in a Bitstream of Encoded Image Data

The Examiner appears to be equating the location of the erroneous words received by Waibel's correction and repair module with Appellant's received bitstream of encoded image data containing the lost or damaged data as claimed in Claim 1. Appellant respectfully points out that Appellant's specification describes the lost or damaged data within the context of data transmission from an encoder to a decoder. While the Examiner is required the interpret the claims broadly, he is also required to construe the terms of the claims in light of the specification. Waibel's errors are not due to data transmission but result from inaccuracies in the speech recognition engine. Furthermore, the erroneous words in Waibel are valid words that are merely incorrect in context, and thus cannot be properly considered either lost or damaged, as those terms are commonly understood. Therefore, Appellant respectfully submits that Waibel's erroneous words in recognized text are not equivalent to lost or damaged data within a bitstream of encoded image data as claimed.

Hypotheses Generated by Phoneme-based Language Models are not Equivalent to Hypotheses Generated for Lost or Damaged Encoded Image Data

The Examiner is asserting that the generation of the hypotheses of the spoken words by Waibel's language models are equivalent to Appellant's claimed generating of hypotheses for lost or damaged data as claimed in Claim 1. In the CPA, Appellant pointed out that one of skill in image art would not look to speech recognition in attempting to recover lost or damaged encoded image data because speech recognition data models are specific to spoken language. In the third non-final Office Action, the

Examiner maintained his single reference § 103 rejection and rebutted Appellant's argument by asserting that "data in a bitstream is still data whether image or speech data" [OA: page 2, lines 14-15]. In the response filed December 5, 2003 Appellant challenged the Examiner's Official Notice that speech data and image data are analogous. The Examiner finally rejected the claims in the next Office Action without citing references in support of the Official Notice as required under MPEP 2144.03(c). Therefore, Appellant respectfully submits that the Examiner has failed to establish a proper *prima facie* case of obviousness with respect to Claim 1. Furthermore, Appellant respectfully submits that there is no evidence in the record or in the art as a whole that even suggests that phoneme-based language models can be used to generate hypotheses for lost or damaged image data. Thus, Appellant respectfully submits that the hypotheses generated by Waibel's language models are not equivalent to Appellant's claimed hypotheses.

Accordingly, Appellant respectfully submits that the Examiner has failed to establish a proper *prima facie* case of obviousness for the claims of Group I .

II. Claims 72-73, 78-80, 89 and 93-96 are Patentable under 35 U.S.C. § 103(a) over 5,712,957 to Waibel et al.

Waibel corrects speech recognition errors caused by the language data models but contains no disclosure directed to the detection of errors due to error propagation in a bitstream of encoded data as claimed in Claim 72. The Examiner rejected Claim 72 (and claims 72-73, 78-80, 89 and 93-96) under § 103(a) without providing references or Official Notice that specifically address this claimed limitation. Therefore, Appellant

respectfully submits the Examiner has failed to establish a proper *prima facie* case of obviousness with regard to the claims of Group II.

III. Claims 14, 15, 19, 20, 50, 51, 54, 55, 70, 75, 76, 84-86 and 92 are Patentable under 35 U.S.C. § 103(a) over 5,712,957 to Waibel et al.

Claims 14, 15, 19, 20, 50, 51, 54, 55, 70, 75, 76, 84-86 and 92 depend from one of the independent claims in Groups I or II, and are separately patentable from the independent claims because of further limitations. In particular, each of the claims further claims pixel error recovery.

Because Waibel is directed to correcting errors in speech recognition and contains no reference to image pixel recovery, Waibel alone cannot render obvious Appellant's invention as claimed in Claim 14. The Examiner rejected claims 14 (and claims 15, 19, 20, 50, 51, 54, 55, 70, 75, 76, 84-86 and 92) under § 103(a) without providing references or Official Notice that specifically address the additional limitation of pixel error recovery. Therefore, Appellant respectfully submits the Examiner has failed to establish a proper *prima facie* case of obviousness with regard to the claims of Group III.

IX. CONCLUSION

Because the Examiner has failed to establish a proper *prima facie* case of obviousness for the claims of Group I, or proper separate *prima facie* cases for the claims of Groups II and III, under § 103(a) over Waibel, Appellant respectfully requests the Board reverse the rejections of Claims 1-76 and 78-96 under 35 U.S.C. § 103(a) and direct the Examiner to enter a Notice of Allowance for Claims 1-76 and 78-96.

Fee for Filing a Brief in Support of Appeal

Enclosed is a check in the amount of $ 330.00 to cover the fee for filing a brief in support of an appeal as required under 37 C.F.R. 1.17(c) and 1.192(a).

Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Appellant hereby requests such extension.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR
& ZAFMAN LLP

Dated: AUG. 23, 2004

Sheryl S. Holloway
Attorney for Applicant
Registration No. 37,850

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1026
(408) 720-8300 x309

Atty Docket No. 080398P198 *Patent*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Examiner: Chaudry, M.
Kondo, et al.	Art Unit: 2133
Serial No. 09/249,489	
Filed: February 12, 1999	
For: METHOD AND APPARATUS FOR ERROR DATA RECOVERY	

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPENDIX A FOR

APPELLANT'S BRIEF UNDER 37 C.F.R. 1.192

1. (Previously Amended) A method for recovery of lost/damaged data comprising:

generating hypotheses for lost/damaged data within a received bitstream of encoded image data;

generating scores for the hypotheses;

selecting a hypothesis corresponding to a best score from the generated scores;

decoding the lost/damaged data according to the selected hypothesis;

evaluating at least one other hypothesis and selectively flagging data based upon the evaluation; and

executing an error recovery process on the flagged data.

2. (Previously Amended) The method as set forth in claim 1, wherein the evaluating comprises examining at least one score distribution of at least one hypothesis.

3. (Previously Amended) The method as set forth in claim 2, wherein the evaluating comprises comparing the score distribution to a threshold.

4. (Previously Amended) The method as set forth in claim 2, wherein data of the received bitstream of encoded image data is divided into a plurality of block units of varying length, wherein the hypotheses indicate the endpoint of at least one block unit, and the evaluating is performed across at least a portion of the plurality of block units.

5. (Original) The method as set forth in claim 4, wherein data is flagged for the plurality of blocks.

6. (Original) The method as set forth in claim 4, wherein a block unit is selected from the group consisting of a block or group of blocks.

7. (Original) The method as set forth in claim 4, wherein the block unit is of varying lengths.

8. (Previously Amended) The method as set forth in claim 1, wherein:

the received data is divided into a plurality of block units;

the selected hypothesis indicating the endpoint of at least one block unit; and

the evaluating comprising evaluating combined hypotheses for at least a portion of the plurality of block units.

9. (Previously Amended) The method as set forth in claim 8, wherein the evaluating comprises generating a combined score distribution.

10. (Previously Amended) The method as set forth in claim 9, wherein the evaluating comprises comparing the combined score distribution to a combined threshold.

11. (Previously Amended) The method as set forth in claim 2, wherein the score distribution is determined according to a difference function between values derived from the scores of the hypotheses.

12. (Previously Amended) The method as set forth in claim 2, wherein the score distribution is determined according to the difference between a best score of scores of the hypotheses and a second best score of the scores of the hypotheses.

13. (Previously Amended) The method as set forth in claim 1, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

14. (Previously Amended) The method as set forth in claim 1, wherein the error recovery process comprises a pixel error recovery method.

15. (Previously Amended) The method as set forth in claim 10, wherein the encoded image data is divided into a plurality of blocks and the error recovery process comprises a pixel error recovery process that uses neighboring block information to recover pixel data of flagged data.

16. (Previously Amended) An apparatus for recovery of lost/damaged data comprising:

a data recovery circuit configured to generate hypotheses for lost/damaged data within a received bitstream of encoded image data, generate scores for the hypotheses, select a hypotheses corresponding to a best score from the generated scores and decode the lost/damaged data according to the selected hypothesis;

an error propagation detection circuit coupled to the data recovery circuit, the error propagation circuit configured to selectively flag data based upon an evaluation of the hypotheses; and

an error recovery circuit coupled to the data recovery circuit and the error propagation detection circuit, the error recovery circuit configured to execute error recovery on the flagged data.

17. (Previously Amended) The apparatus as set forth in claim 16, wherein the error propagation circuit performs an evaluation by examining at least one score distribution corresponding to the hypotheses.

18. (Original) The apparatus as set forth in claim 17, wherein the error propagation circuit performs an evaluation by comparing the score distribution to a threshold.

19. (Previously Amended) The apparatus as set forth in claim 16, wherein the error recovery method comprises a pixel error recovery method.

20. (Previously Amended) The apparatus as set forth in claim 16, wherein encoded image data is divided into blocks and the error recovery method comprises a pixel error recovery method that uses neighboring block information to recover pixel data of flagged data.

21. (Previously Amended) The apparatus as set forth in claim 17, wherein received data is divided into a plurality of block units, the hypotheses indicating the endpoint of at least one block unit, the score distribution assembled across at least a portion of the plurality of block units.

22. (Original) The apparatus as set forth in claim 21, wherein the error propagation detection circuit flags the data in the plurality of blocks for which an error recovery method is required.

23. (Original) The apparatus as set forth in claim 21, wherein a block unit is selected from the group consisting of a block or group of blocks.

24. (Previously Amended) The apparatus as set forth in claim 21, wherein the received data is divided into a plurality of block units, the selected hypothesis indicating the

endpoint of at least one block unit and the evaluation comprising an evaluation of combined hypotheses for at least a portion of the plurality of block units.

25. (Original) The apparatus as set forth in claim 24, wherein the evaluation comprises a combined score distribution using score distributions corresponding to at least a portion of the plurality of block units.

26. (Original) The apparatus as set forth in claim 25, wherein the evaluation further comprises a comparison of the combined score distribution to a combined threshold.

27. (Previously Amended) The apparatus as set forth in claim 17, wherein the score distribution is determined according to the difference between a best score of scores of the hypotheses and a second best score of the scores of hypotheses.

28. (Previously Amended) The apparatus as set forth in claim 16, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

29. (Original) The apparatus as set forth in claim 16, wherein the data recovery circuit and error propagation detection circuit comprises circuitry selected from the group consisting of logic circuits and a processor.

30. (Previously Amended) A computer readable medium comprising instructions, which when executed in a processing system, cause the system to perform data recovery of lost/damaged data, comprising:

generating hypotheses for lost/damaged data within a received bitstream of encoded image data;

generating scores for the hypotheses;

selecting a hypothesis corresponding to a best score from the generated scores;

decoding the lost/damaged data according to the selected hypothesis;

evaluating the hypotheses and selectively flagging data based upon the evaluation; and

executing an error recovery process on the flagged data.

31. (Previously Amended) The computer readable medium as set forth in claim 30, wherein evaluating comprises examining at least one score distribution of at least one hypothesis.

32. (Original) The computer readable medium as set forth in claim 31, wherein evaluating comprises comparing the score distribution to a threshold.

33. (Previously Amended) The computer readable medium as set forth in claim 30, wherein the data of the received bitstream of data is divided into a plurality of block units of varying length, the hypotheses indicate the endpoint of at least one block unit, and the evaluating is performed across at least a portion of the plurality of block units.

34. (Original) The computer readable medium as set forth in claim 33, wherein data is flagged for the plurality of blocks.

35. (Original) The computer readable medium as set forth in claim 33, wherein a block unit is selected from the group consisting of a block or group of blocks.

36. (Previously Amended) The computer readable medium as set forth in claim 30, wherein:

the received data is divided into a plurality of block units;

the selected hypothesis indicating the endpoint of at least one block unit; and

the evaluating comprising evaluating combined hypotheses for at least a portion of the plurality of block units.

37. (Previously Amended) The computer readable medium as set forth in claim 36, wherein the evaluating comprises generating a combined score distribution.

38. (Previously Amended) The computer readable medium as set forth in claim 37, wherein the evaluating comprises comparing the combined score distribution to a combined threshold.

39. (Previously Amended) The computer readable medium as set forth in claim 30, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

40. (Previously Amended) An apparatus for recovery of lost/damaged data comprising:

means for generating hypotheses for lost/damaged data within a received bitstream of encoded image data;

means for generating scores for the hypotheses;

means for selecting a hypothesis corresponding to a best score from the generated scores;

means for decoding the lost/damaged data according to the selected hypothesis;

means for evaluating the hypotheses and selectively flagging data based upon the evaluation; and

means for executing an error recovery process on the flagged data.

41. (Previously Amended) A method for recovery of data comprising:

generating hypotheses for lost/damaged data within a received bitstream of encoded image data;

assembling at least one score distribution using hypotheses; and

selectively flagging data that an error recovery method is required for based upon the score distribution.

42. (Previously Amended) The method as set forth in claim 41, wherein data of the received bitstream of encoded image data is divided into a plurality of block units of varying length, the hypotheses indicate the endpoint of at least one block unit, and the score distribution is assembled across at least a portion of the plurality of block units.

43. (Previously Amended) The method as set forth in claim 42, wherein the flagging selectively flags the data in the plurality of blocks for which an error recovery method is required.

44. (Previously Amended) The method as set forth in claim 42, wherein a block unit is selected from the group consisting of a block or group of blocks.

45. (Previously Amended) The method as set forth in claim 41, wherein the received data is divided into a plurality of block units, the hypotheses indicate the endpoint of at least one block unit, the assembling comprising if a score distribution for a block unit of the plurality of block units is within a range defined by an individual threshold, generating a combined score distribution of the score distributions for at least a portion of the plurality of block units; and the flagging comprising if the combined score distribution is within a range defined by a combined threshold, flagging that an error recovery method is required for the at least a portion of the plurality of block units.

46. (Previously Amended) The method as set forth in claim 41, wherein the score distribution is determined according to a difference function between values derived from the scores of the hypotheses.

47. (Previously Amended) The method as set forth in claim 41, wherein the score distribution is determined according to the difference between a best score of scores of the hypotheses and a second best score of the scores of hypotheses.

48. (Previously Amended) The method as set forth in claim 41, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

49. (Previously Amended) The method as set forth in claim 41, further comprising the performing an error recovery method for flagged data.

50. (Previously Amended) The method as set forth in claim 49, wherein the error recovery method comprises a pixel error recovery method.

51. (Previously Amended) The method as set forth in claim 49, wherein the encoded image data is divided into a plurality of blocks and the error recovery method comprises a pixel recovery method that uses neighboring block information to recover pixel data of flagged data.

52. (Previously Amended) An apparatus for recovery of data comprising:

a data recovery circuit configured to generate hypotheses for lost/damaged data within a received bitstream of encoded image data and assemble at least one score distribution using hypotheses; and

an error propagation detection circuit coupled to the data recovery circuit, the error propagation detection circuit configured to selectively flag data that an error recovery method is required for based upon the score distribution.

53. (Original) The apparatus as set forth in claim 52, further comprising an error recovery circuit coupled to the error propagation detection circuit, the error recovery circuit configured to generate an error recovery method for flagged data.

54. (Previously Amended) The apparatus as set forth in claim 53, wherein the error recovery method comprises a pixel error recovery method.

55. (Previously Amended) The apparatus as set forth in claim 53, wherein the encoded image data is divided into blocks and the error recovery method comprises a pixel error recovery method that uses neighboring block information to recover pixel data of flagged data.

56. (Previously Amended) The apparatus as set forth in claim 53, wherein received data is divided into a plurality of block units of varying length, the hypotheses indicating the

endpoint of at least one block unit, the score distribution assembled across the plurality of block units.

57. (Original) The apparatus as set forth in claim 56, wherein the error propagation detection circuit flags the data in the plurality of blocks for which an error recovery method is required.

58. (Previously Amended) The apparatus as set forth in claim 52, wherein received data is divided into a plurality of block units, the hypotheses indicating the endpoint of at least one block unit, the error propagation detection circuit further configured to:

generate a combined score distribution of the score distributions for at least a portion of the plurality of block units if a score distribution for a block unit of the plurality of block units is within a range defined by an individual threshold; and

selectively flag that an error recovery method is required for the at least a portion of the plurality of block units if the combined score distribution is within a range defined by a combined threshold.

59. (Previously Amended) The apparatus as set forth in claim 52, wherein the score distribution is determined according to a difference function between values derived from the scores of the hypotheses.

60. (Previously Amended) The apparatus as set forth in claim 52, wherein the score distribution is determined according to the difference between a best score of scores of the hypotheses and a second best score of the scores of hypotheses.

61. (Previously Amended) The apparatus as set forth in claim 52, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

62. (Original) The apparatus as set forth in claim 52, wherein the data recovery circuit and error propagation detection circuit comprises circuitry selected from the group consisting of logic circuits and a processor.

63. (Previously Amended) A computer readable medium comprising instructions, which when executed in a processing system, causes the system to perform recovery of data, comprising:

generating hypotheses for lost/damaged data within received encoded image data;

assembling at least one score distribution using at least one other hypothesis; and

selectively flagging data that an error recovery method is required for based upon the score distribution.

64. (Previously Amended) The computer readable medium as set forth in claim 63, wherein the received encoded image data is divided into a plurality of block units of varying length, the hypotheses indicating the endpoint of at least one block unit, the score distribution assembled across the plurality of block units.

65. (Original) The computer readable medium as set forth in claim 64, wherein the instruction that, when executed, flags an error recovery method for the data flags an error recovery method for the plurality of blocks.

66. (Previously Amended) The computer readable medium as set forth in claim 63, wherein the received encoded image data is divided into a plurality of block units of varying lengths, the hypotheses indicating the endpoint of at least one block unit, the instruction, which when executed assembles a score distribution, comprises if a score distribution for a block unit of the plurality of block units is within a range defined by an individual threshold, generating a combined score distribution of the score distributions for at least a portion of the plurality of block units; and the instruction, which when executed flags data, comprises if the combined score distribution is within a range defined by a combined threshold, flagging that an error recovery method is required for the at least a portion of the plurality of block units.

67. (Previously Amended) The computer readable medium as set forth in claim 63, wherein the score distribution is determined according to a difference function between values derived from the scores of the hypotheses.

68. (Previously Amended) The computer readable medium as set forth in claim 63, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

69. (Original) The computer readable medium as set forth in claim 63, further comprising instructions which, when executed, comprise performing an error recovery method for flagged data.

70. (Previously Amended) The computer readable medium as set forth in claim 69, wherein the error recovery method comprises a pixel error recovery method.

71. (Previously Amended) An apparatus for recovery of data comprising:

means for generating hypotheses for lost/damaged data in encoded image data;

means for assembling at least one score distribution using at least one hypothesis; and

means for selectively flagging that an error recovery method is required based upon the score distribution.

72. (Previously Amended) A method for recovery of data from a bitstream of encoded image data comprising:

detecting errors in data due to error propagation within the bitstream of encoded image data; and

performing a data error recovery process on data with detected errors.

73. (Previously Amended) The method as set forth in claim 72, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

74. (Previously Amended) The method as set forth in claim 72, wherein the detecting comprises:

generating hypotheses for lost/damaged data within the received bitstream of encoded image data;

assembling a score distribution using candidate hypotheses; and

if the score distribution is within a range defined by a threshold, detecting an error.

75. (Previously Amended) The method as set forth in claim 72, wherein the performing a data error recovery process on data comprises using a pixel error recovery process.

76. (Original) The method as set forth in claim 75, wherein the pixel error recovery process comprises a classified adaptive pixel error recovery process.

77. (Cancelled)

78. (Previously Amended) The method as set forth in claim 72, further comprising the receiving error flags indicative of errors with respect to data of the bitstream, said performing a data error recovery process further comprising performing the data error recovery process on the data corresponding to received error flags.

79. (Previously Amended) The method as set forth in claim 72, wherein the performing a data error recovery process is performed on at least one block unit of data.

80. (Previously Amended) The method as set forth in claim 72, further comprising:

decoding at least a portion of the bitstream of encoded image data;

preventing data degradation by performing a block unit recovery process on the decoded data in block units in which errors due to error propagation are detected, said preventing performed prior to the performing a data error recovery process.

81. (Previously Amended) An apparatus for recovery of data from a bitstream of encoded image data comprising:

a data recovery circuit configured to generate hypotheses for lost/damaged data within a received bitstream of encoded image data;

an error propagation detection circuit coupled to the data recovery circuit, said error propagation detection circuit configured to detect errors in data due to error propagation within the bitstream of data; and

an error recovery circuit coupled to the error propagation detection circuit, the error recovery circuit configured to perform a data error recovery process on data with detected errors.

82. (Previously Amended) The apparatus as set forth in claim 81, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

83. (Previously Amended) The apparatus as set forth in claim 81, wherein the error propagation detection circuit generates hypotheses for lost/damaged data within the received bitstream of encoded image data, assembles a score distribution using hypotheses, and detects an error if the score distribution is within a range defined by a threshold.

84. (Previously Amended) The apparatus as set forth in claim 81, wherein the error recovery circuit uses a pixel error recovery process.

85. (Original) The apparatus as set forth in claim 84, wherein the error recovery circuit uses a classified adaptive pixel error recovery process.

86. (Original) The apparatus as set forth in claim 81, further comprising a pixel error flag circuit configured to receive error flags indicative of errors with respect to data of the bitstream, said error recovery circuit further configured to performing error recovery on the data corresponding to received error flags.

87. (Original) The apparatus as set forth in claim 81, wherein the error recovery circuit performs error recovery on at least one block of data.

88. (Previously Amended) The apparatus as set forth in claim 81, further comprising:

a decoder coupled to receive and decode at least a portion of the bitstream of encoded image data;

a data degradation prevention unit coupled to the decoder and the error propagation detection circuit and configured to perform a block unit recovery process on the decoded data in block units in which errors due to error propagation are detected.

89. (Previously Amended) A computer readable medium comprising instructions, which when executed in a processing system, causes the system to perform recovery of data, comprising:

detecting errors in data due to error propagation within a bitstream of encoded image data; and

performing a data error recovery process on data with detected errors.

90. (Previously Amended) The computer readable medium as set forth in claim 89, wherein the bitstream further comprises data selected from the group consisting of correlated data and audio data.

91. (Previously Amended) The computer readable medium as set forth in claim 89, wherein detecting comprises:

generating hypotheses for lost/damaged data within the received bitstream of encoded image data;

assembling a score distribution using hypotheses; and

if the score distribution is within a range defined by a threshold, detecting an error.

92. (Previously Amended) The computer readable medium as set forth in claim 89, wherein performing a data error recovery process on data comprises using a pixel error recovery process.

93. (Original) The computer readable medium as set forth in claim 89, further comprising instructions, which when executed performing a process comprising receiving error flags indicative of errors with respect to data of the bitstream, the instructions which when executed perform a data error recovery process further comprising performing the data error recovery process on the data corresponding to received error flags.

94. (Original) The computer readable medium as set forth in claim 89, wherein a data error recovery process is applied to at least one block unit of data.

95. (Previously Amended) The computer readable medium as set forth in claim 94, further comprising instructions, which when executed, perform a process comprising:

decoding at least a portion of the bitstream of encoded image data;

preventing data degradation by performing a block unit recovery process on the decoded data in block units in which errors due to error propagation are detected, preventing performed prior to performing a data error recovery process.

96. (Previously Amended) An apparatus for recovery of data from a bitstream of encoded image data comprising:

means for detecting errors in data due to error propagation within the bitstream of encoded image data; and

means for performing a data error recovery process on data with detected errors.